Ownership matrix

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1.0 PURPOSE AND SCOPE

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This procedure establishes requirements for identification and control of asbestos hazards during Tank Operations Contractor (TOC) work activities in TOC facilities and is based on:

- OSHA 29 CFR 1910.1001, "Asbestos Standard, General Industry"
- OSHA 29 CFR 1926.1101, "Asbestos Standard, Construction Industry"
- OSHA Letters of Interpretation, "Asbestos Standards"
- Applicable and relevant elements of Washington Administrative Code (WAC) 296-65, "Asbestos Removal and Encapsulation:"
  - Asbestos worker training course content and certification
  - Asbestos Supervisor training course content and certification.
- Applicable and relevant elements of 40 CFR 763, Subpart E, "Asbestos Hazard Emergency Response Act (AHERA):"
  - Sampling
  - Response actions
  - Model Accreditation Plan (MAP) training accreditation for persons engaged in asbestos work activities (AHERA Inspector, Management Planner, Project Designer).
- 40 CFR 61, Subpart N, Asbestos, "National Emission Standard for Hazardous Air Pollutants (NESHAP)"
- Memorandum of Agreement Relating to Removal of Asbestos Materials and Demolitions on the Hanford Site (Washington Department of Ecology and Department of Energy) (7.1.10)
- Article 8 of the Benton County Air Authority (BCAA), Regulation 1. (7.1.11)

These regulations establish the following airborne asbestos concentration limits:

- Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter of air (f/cc) over an 8 hour time weighted average (8-hr TWA) in the breathing zone
- Excursion Limit (EL) of 1.0 f/cc averaged over 30 minutes in the breathing zone
- Clearance Level of 0.01 f/cc as the indoor air quality standard to meet following an asbestos response action.

This document applies, but is not limited to, the following activities where asbestos-containing material (ACM) or presumed asbestos-containing material (PACM) are disturbed in direct or subcontract work in TOC facilities and operations:

- Cutting, grinding, abrading, or otherwise rendering ACM/PACM friable
- Maintenance removal, repair, encapsulation, inspection of ACM/PACM
- Construction repairs, alterations, renovations that disturb ACM/PACM
- Collection of bulk samples
- Asbestos debris/spill cleanup
- Building demolition
- Disposal of ACM waste.

Work planning guidance is provided in Tables 1, 2, and 3 and also in Attachments A and B.

2.0 IMPLEMENTATION

This procedure is effective on the date shown in the header.

Interim compensatory provisions include immediate use of new forms pending revision to TF-OPS-IHT-010 and issuance of new procedure 7-ABS-860.

2.1 Interim Implementation Milestones

- Revise procedure TF-OPS-IHT-010 by May 31, 2012 to include bulk asbestos sampling documentation.
- Provide IHT Training on revisions to TO-IHT-010, by June 30, 2012.
- Revise Qualification for Asbestos subject matter expert (SME) for professionals with Safety and/or Industrial Hygiene Qualification cards, by May 31, 2012.
- Issue new procedure 7-ABS-860, Asbestos Inspection and Bulk Sampling by May 31, 2012.

3.0 RESPONSIBILITIES

3.1 Safety and Health Programs

- Maintains this procedure and has program management responsibility
- Maintains TOC's version of the Site Wide Industrial Hygiene Database (SWIHD) and other electronic information management systems.
- Maintains Safety & Health (S&H) staff with the Asbestos subject matter expert (SME) qualification and authority in line organizations.
- Maintains an Asbestos Coordinator who is a Certified Industrial Hygienist (CIH) or equivalent, to oversight Asbestos Program.

3.2 Training

Maintains the training process.

3.3 Facilities/Shift Management

- Maintains ACMs in TOC facilities in good condition via periodic asbestos inspections:
  - Friable ACMs, every six months
  - Periodic AHERA re-inspection, every 3 years.
- As directed by the management plan, funds and schedules asbestos response actions.
- Notifies facility occupants and visitors of planned asbestos activities and provides contact information.

3.4 Medical Provider

Per OSHA asbestos requirements, provides asbestos medical surveillance.

3.5 Integration and Control, Analytical Project Management

Maintains laboratory analytical services to analyze airborne fiber/asbestos and asbestos in bulk material samples.

3.6 Waste Services

- Maintains and ensures compliant disposal of asbestos waste.
- Receives and handles packaged waste from asbestos regulated areas.

3.7 Asbestos Coordinator

- Acts as the TOC asbestos point of contact (POC) and interpretive authority.
- Works with the following to verify asbestos program compliance through training, planning, inspection, and sampling, review of work practices/controls and project documentation:
  - Asbestos SMEs
  - AHERA Project Designers
  - AHERA Management Planners
  - AHERA Inspectors
  - Asbestos Supervisors
  - Asbestos Workers
  - Facility/Shift Managers
  - Environmental Protection
  - Employees.

- Reviews asbestos planning and sample data for activities where ACM/PACM is disturbed, this includes the following documents:

  – TOC Asbestos Work Permit (AWP) (A-6003-870)
  – TOC Asbestos Negative Exposure Assessment (NEA) (A-6006-111)
  – TOC Report of Limited AHERA Inspection and Sampling.

- Recommends prioritized asbestos response actions to Facility/Shift Management for funding and scheduling.

- Interfaces with subcontractor organizations to request/provide sampling and material information.

- Works with contracting organizations to identify asbestos requirements for subcontracted work.

3.8 Asbestos Subject Matter Expert

- Works with the following to plan and report TOC activities where ACM/PACM is disturbed:

  – Asbestos Coordinator
  – AHERA Project Designers
  – AHERA Management Planners
  – AHERA Inspectors
  – Asbestos Supervisors
  – Asbestos Workers
  – Facility/Shift Managers
  – Environmental Protection
  – Employees.

- Develops and maintain exposure assessments and NEAs (A-6006-111) for TOC asbestos activities.

- Reviews the AWP (A-6003-870) implementation with Asbestos Supervisor and signs post-work to close permit.

- Addresses asbestos hazards on the Job Hazard Analysis checklist (A-6004-101) and signs.

- Verifies sample data from AHERA Inspectors meets the Site Wide Industrial Hygiene Database (SWIHD) documentation requirements.

- Works with AHERA Inspectors to prepare AHERA and Asbestos Inspection reports.

- Assists Asbestos Coordinator in development and maintenance of TOC asbestos management plans, as applicable.

- Receives, interprets, and notifies Asbestos supervisor and other stakeholders of sampling results.

- Reports project and sample results and posts reports on the S&H Asbestos webpage.

- Ensures that asbestos data documentation in SWIHD is maintained to allow trending of exposure data, facilitate maintenance of NEAs, and provide comprehensive facility reporting.

- Notifies the IH manager and Asbestos Coordinator immediately upon receipt of sample results exceeding asbestos exposure or air quality standards, in the event of a fiber release, or of other non-compliant conditions.

3.9 AHERA Project Designer/Asbestos Work Planner

- Works with the following personnel to plan and document TOC activities where ACM/PCM is disturbed:

  – Asbestos SME(s) and Coordinator
  – AHERA Inspector (s)
  – Asbestos Supervisors (s)
  – Environmental Protection.

- Reviews credible evidence to rebut material designation of PACM for materials expected to be disturbed during a planned work activity.

- Identifies the need for bulk sampling and works to schedule sampling with Scheduling and Facilities staff.

- Plans work activities where ACM/PACM is disturbed and approves work orders in CHAMPS or IWMS.

- Generates the AWP (A-6003-870) with input from Asbestos SMEs and supervisors.

- As applicable, attaches TOC NEAs (A-6006-111) to the AWP for recurring activities.

- Identifies asbestos hazard on the Job Hazard Analysis checklist and requests Asbestos SME input and signature.

- Prepares the Waste Planning checklist for disposal of waste.

- Prepares BCAA project notification on intent (NOI) for activities where >10 linear feet or >48 square feet of ACM/PACM are disturbed or removed, if not previously reported to the BCAA via the Annual NOI, 10 days in advance of work, to the BCAA, or as directed by Environmental Protection.

- Prepares project NOI for all asbestos abatement activities where ACM/PACM are disturbed or removed that are >260 linear feet or >160 square feet, 10 days in advance of work, to the BCAA.

- For spills events and unanticipated asbestos abatement, works with Environmental Protection to make an appropriate notification to the Benton County Authority as soon as feasible.

- Works with the Facility/Shift Manager to schedule asbestos activities and inform occupants and visitors of asbestos activities.

- Works with the Asbestos Supervisor and Asbestos SMEs to review, sign and close the AWP, which is retained in the work package.

- As applicable, updates Asbestos Gasket Database after ACM gasket removal.

3.10 Asbestos Competent Person (ACP)

Perform the duties of the Competent Person, as needed, and including evaluation of TOC maintenance activities for asbestos hazards:

- Evaluates and directs spill response clean-up
- Evaluates maintenance work packages for potential asbestos scope
- Develops standing JHAs for routine activities with asbestos hazards
- Oversights maintenance activities to ensure safe and compliant work practices.

3.11 Asbestos Supervisor

- Works with the AHERA Project Designer, ACP, and Asbestos SME to provide input for TOC operations and construction activities where ACM/PACM is disturbed.

- Acts as the person in charge (PIC) of work activities inside a Class I-III asbestos regulated area, with authority to implement immediate corrective actions.

- Conducts work according to the work package instructions:

  – Verifies the regulated area is posted and controlled.

  – Signs the AWP and authorizes entrants to the regulated area.

  – Verifies that the authorized entrants sign and record certification number and expiration date on the AWP or entry log.

  – Verifies that engineering and work controls identified on the AWP are functioning properly and are being used per the work instruction.

  – Verifies that employee sampling is performed as identified on the AWP.

  – Verifies that employees don personal protective equipment (PPE) as identified on the AWP.

  – Verifies that employees following doffing and decontamination procedures when leaving the regulated area as identified on the AWP.

- Verifies asbestos waste is properly packaged, labeled, and disposed of.
- Completes the "Asbestos Supervisor" portion of the AWP and reviews work execution with the Asbestos SME.
- Returns AWP to the AHERA Project Designer for retention with work package documentation.

3.12 AHERA Inspector

- Performs limited AHERA and Asbestos Inspections, assessments, and sampling of ACM/PACM in TOC facilities.
- Works with the Asbestos SME(s) to document AHERA and Asbestos Inspections, including reporting.
- Identifies homogenous material(s) inspected, estimates amount of material and describes functional spaces where homogenous material(s) are present.
- Classifies homogeneous material condition, ranks the material's potential for disturbance and provides a numeric AHERA rank.
- Identifies the number of AHERA-required and recommended samples, identifies sample locations, and discusses sampling requirements with the Asbestos SME and AHERA Project Designer.
  - Work with the Asbestos SME to identify materials for special analysis such as point-counting materials with results in the 2-3% asbestos range, and/or Transmission Electron Microscopy (TEM) confirmation sampling for floor and ceiling tile.
- As applicable to the work to be performed, documents Asbestos Inspection and Bulk Sampling activities with systematic, defensible and credible written notes. Information recorded in Asbestos Inspection notes and documentation should include:
  - Inspection date(s)
  - AHERA Inspectors name(s) and signature(s)
  - AHERA certification number(s) and expiration date(s)
  - Tables, photographs, and maps showing materials of interest, distribution of materials, and samples locations
  - Materials excluded from sampling on the basis on documented material determination

- Materials excluded from sampling on the basis of visual determination:
  - Wood, glass, fiberglass, metal, *Blue-Gard* gaskets, urethane foam, CMU blocks, aggregate concrete.
- Limits or bound of inspection and/or uninspected or other areas excluded from the inspection.

- Collects bulk samples using SWIHD generated field logs, labels and Chain of Custody (COC) forms.
- Affixes "DANGER" asbestos label to sampling waste and coordinates disposal of sampling waste with Facility/Shift Manager.
- Signs the COC and releases the samples to an Industrial Hygiene Technician (IHT) for sample handling, or delivers the samples to the lab directly for bulk asbestos analysis.
- Reports friable ACM found in poor condition immediately to the Asbestos SME or Coordinator, and/or Facility/Shift Manager.

3.13 Certified Asbestos Worker

- Performs Class I-III asbestos abatement activities and waste packaging in regulated areas.
- Performs Class IV asbestos clean-up of ACM/PACM.
- Wears the proper PPE and follows work and decontamination directions per the AWP.

3.14 IH Technician

- Performs Class IV support duties, personal and area asbestos air sampling, inside/outside asbestos regulated areas.
- Documents Asbestos Inspection and Bulk Sampling data in the SWIHD and other approved electronic storage locations:
  - Generates the IH survey, field log, sample labels and chain of custody (COC)
  - As needed, assists AHERA Inspectors with sample custody and handling.

3.15 Technical Support and Services

As identified in the work package, perform Class IV support duties inside/outside asbestos regulated areas.

3.16 Environmental Protection

Works with AHERA project designers to complete project-specific and annual asbestos NOIs, as required.

3.17 Custodian

As needed, performs Class IV asbestos floor maintenance (i.e., stripping, buffing) using guidelines in Attachment B.

3.18 Employee

Observes postings and reports spills immediately.

4.0 PROCEDURE

This procedure is based on work activity classifications identified in the OSHA Construction Standard and has an antecedent section of general OSHA requirements and prohibitions that apply to all asbestos activities. It is followed by sections outlining TOC processes for planned and unplanned asbestos activities.

1. Planned activities where ACM/PACM is expected to be disturbed:

    - Class I work, removal of friable ACM/PACM
    - Class II work, removal of non-friable ACM/PACM
    - Class III work, disturbance/abatement of < 3 square or linear feet ACM/PACM
    - Class IV work, support activities in asbestos regulated areas, and/or cleanup of ACM/PACM debris

2. Unplanned and maintenance activities:

    - Class IV work ACM/PACM spill clean-up and asbestos floor maintenance (stripping and buffing).

4.1 Requirements

4.1.1 General Asbestos Requirements

Maintain exposures below the permissible exposure limit (PEL) and excursion limit (EL) using a combination of work practices, controls, and instructions to control the hazard, as feasible and in compliance with the OSHA Construction Asbestos Standard (29 CFR 1926.1101), including:

- Wet methods when handling ACM/PACM
- Isolation of hazard using critical barriers, ventilation or process isolation, or negative pressure enclosure (NPE)
- Directed ventilation and vacuum cleaners equipped with High efficiency particulate air (HEPA) filters
- Glove bag or mini-enclosure to contain dust/airborne fiber where thermal system insulation (TSI) or surfacing material is cut, drilled, abraded, sanded, sawed, chipped

- Glove bag use to remove gaskets, with exceptions noted in 4.1.2
- HEPA filtered exhaust and dust collection or water spray system for power tools used to cut ACM/PACM
- Clearly demarcated work areas with "DANGER Asbestos" signs or barrier tape
- Impermeable drop cloth under ACMs that are disturbed (as feasible)
- Prompt cleanup and disposal of asbestos waste in labeled, leak-tight containers
- Use of trained employees for asbestos work activities
- Use of personal and equipment decontamination practices.

4.1.2 Exceptions

Exceptions to 4.1.1.compliance measures are noted:

- Where additional/greater hazards are introduced from use of a method of compliance, such as:
  - Electrical and heat hazards from use of wet methods on "live" equipment
  - Use of water/wet methods when heat gun is used for vinyl flooring abatement
  - Gasket removal in glove bags or enclosures on tank farm systems:
    - Under negative pressure
    - Where there is the potential for intrusion of chemical and/or flammable gas and vapor into the glove bag (positive pressure)
    - Where use of glove bag imposes additional time demands in areas with posted chemical or radiological hazards and ALARA (as low as reasonably achievable) practices.

      NOTE: Where a workplace control is not used due to introduction of greater hazards, such as glove-bag use during gasket removal, use of respirators may be required as a compensatory measure regardless of a negative exposure assessment (NEA).
- Roofing work and materials (limited exemption under OSHA construction standard for asbestos).

4.1.3 OSHA Prohibitions

The following actions are prohibited:

- Use of high speed abrasive disc saws or similar mechanical equipment without a point of cut ventilator or HEPA filtered enclosure
- Use of compressed air
- Dry sweeping, shoveling, or cleanup of dust and debris
- Employee rotation as a means to reduce employee exposure or achieve compliance with asbestos PELs.

4.1.4 Postings, Markings, and, Regulated Area Requirements

Entrances to locations where Class I-III asbestos activities are performed, where ACM/PACM is found in poor condition, and areas surrounding a spill or unplanned event shall be posted and controlled as a regulated area. This does not include bulk material sampling, which does not require a regulated area.

Regulated area postings and barrier tape shall read:

DANGER
ASBESTOS
CANCER and LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

The following posting shall be included when respirators and protective clothing are required, or may be stated in work control documents covered during the pre-job brief, in lieu of posting:

RESPIRATORS and PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

The use of asbestos warning barrier tape, critical barriers, or negative pressure enclosures may be used to demarcate a regulated area. Critical barriers or negative pressure enclosures themselves map serve to mark the regulated area.

- Critical barriers or negative pressure enclosures themselves may serve to mark the regulated area.
- Markings are not required for Class II and III activities providing there are no occupants with access to the regulated area and all entry points are posted.

An Asbestos Supervisor shall supervise asbestos activities occurring inside Class I-III regulated areas. Supervisor duties include verifying postings are in place, limiting access to authorized personnel, requiring the use of protective clothing and equipment, verifying decontamination practices and hygiene facilities are appropriate to the work being performed, verifying the effectiveness of engineering and work controls, and taking corrective action to prevent exposure:

- Certified asbestos workers shall conduct Class I-III and some Class IV asbestos work

- Technical support employees are permitted in the regulated area to perform Class IV support activities under the direction of the Asbestos Supervisor.

4.1.5 Credible Evidence Documenting That a Material Does Not Contain Asbestos

An AHERA Inspector may visually identify the following materials as "asbestos free":

- Wood
- Glass
- Fiberglass
- Metal.

NOTE: Some batting contains black ACM mastic.

Regional TOC process knowledge allows identification of the following materials as "asbestos free":

- *Garlock Blue-Gard 3000*™ gaskets
- Aggregate concrete
- CMU blocks
- Urethane foam.

NOTE: "Soft" or decorative concrete is a suspect ACM.

Building materials, other than wood, glass, fiberglass, metal, aggregate concrete, CMU, urethane, and *Garlock Blue-Gard 3000*™ gaskets, shall be treated as PACM unless there is credible evidence to rebut a PACM designation.

The following objective evidence is accepted as credible to rebut designation as an ACM

- AHERA Inspection reports and/or bulk sample results showing no asbestos, or $\leq$1% asbestos. NOTE: The presence of any asbestos in a material requires Asbestos SME review, even at <1%

- A record of gasket replacement/abatement in the Asbestos Gasket Database, with retrievable work package, and/or verified with a visual inspection of the existing gasket as *Garlock Blue-Gard 3000*™

- A Material Safety Data Sheet (MSDS), product literature or manufacturer's specifications showing that >1% asbestos is not present

- Manufacturer letter with or information indicating materials used did not contain asbestos, i.e., for mobile offices or large equipment

- Other credible documentation including process knowledge or letter of interpretation, with evaluation by Asbestos SME.

4.1.6 Asbestos Notification

The AHERA Project Designer works with Environmental Protection to prepare BCAA project-specific and annual Asbestos NOIs notifications. AHERA Project Designers provide the BCAA the NOI to remove regulated ACM/PACM, 10 days in advance of the activities for all demolitions, or any renovation projects where >10 linear or >48 square feet of ACM/PACM are disturbed/removed, if not previously reported via the Annual NOI for all renovation projects where >260 linear feet or >160 square feet of ACM/PACM are disturbed/removed..

- Asbestos NOIs shall be submitted to the Benton County Clean Air Authority in the manner specified by the regulator
- Documentation of the NOI submittal to Benton County Clean Air Authority shall be maintained in a readily retrievable format, with a courtesy copy to Environmental Protection
- Project-specific NOIs are maintained in CHAMPS with the associated work package
- The AHERA Project Designer prepares NOIs for unplanned fiber release events with assistance from Environmental Protection
- Approved signatories for Asbestos NOIs are identified to the Hanford Mission Support Alliance Contractor, and are noted on the Environmental Integration Homepage under AIR/AOP, subpage "Asbestos."
- AHERA Project Designers assist Environmental Protection staff to prepare annual NESHAP NOIs based on anticipated work scope and past history.

4.2 Planned Asbestos Work Activities

AHERA Project Designer/Planner	1.	Identify project scope to Planners where materials are expected to be disturbed.
	2.	Review credible evidence, such as bulk sample results, to rebut the designation of "PACM" for materials likely to be disturbed during identified work scope.
Asbestos SME	3.	Identify bulk sample results and other information to rebut PACM designation.
AHERA Project Designer/Planner	4.	In the absence of credible evidence to rebut a PACM designation: a. Treat material as PACM b. Plan as Class I-III asbestos work activity.
	5.	Initiate a work package for Class I-III asbestos work, including bulk sampling, using: • TOC AWP (A-6003-870) • TOC NEAs (A-6006-111) (as applicable)

		• TOC Job Hazard Analysis Checklist (JHA) (A-6004-101), Asbestos Hazard identified • Occupant or shift office notification of asbestos activities • NOI (as applicable).
AHERA Project Designer/Planner	6.	Provide notification of asbestos activities and schedule work activities with the Facility/Shift Manager.
Facility Manager or Shift Manager	7.	Notify occupants and visitors of planned asbestos-related activities and provide a point of contact (POC) for additional information.
AHERA Inspector	8.	Perform Class limited AHERA Inspection and bulk sampling per Section 4.2.1.
IHT	9.	Work with AHERA Inspector and Asbestos SME to record bulk sampling information in SWIHD.
Analytical Lab	10.	Send asbestos sampling results to the Asbestos SME and Asbestos Supervisor.
Asbestos SME	11.	Notify the AHERA Inspector, Project Designer/Planner and other stakeholders of bulk sampling results.
	12.	Work with AHERA Inspectors to generate AHERA or Asbestos Inspection report.
AHERA Project Designer/Planner	13.	Receive positive asbestos results (i.e., >1% asbestos) from bulk sampling results and plan work as an asbestos work activity with Asbestos SME and Asbestos Supervisor concurrence.
	14.	Initiate a work package for a Class I-IV asbestos work activity using the following: • TOC AWP • TOC NEA • TOC JHA, Asbestos Hazard identified • Facility/Shift Manager notification of asbestos activities • NOI (as applicable).
	15.	Prepare the project NOI by obtain an authorized signature and, as needed make notifications to Benton County.
Asbestos SME	16.	Work with the AHERA Project Designer/Planner and Asbestos Supervisor to develop work package documents to support asbestos work activities, which may include but are not limited to the following: • TOC AWP

- TOC NEA
- TOC JHA, Asbestos Hazard review and signature
- TOC RADIOLOGICAL WORK PERMIT (RWP), A-6003-902
- TOC WASTE PLANNING CHECKLIST, A-6002-848
- Facility/Shift Manager notification and occupant/visitor notification.

Asbestos Supervisor

17. Review asbestos work methods and controls with the Asbestos SME and AHERA Project Designer.

18. Conduct the pre-job briefing for asbestos work activities and direct work according to work instruction and work control documents.

    NOTE: Applicable documents include the following:

    - TOC AWP
    - TOC NEA
    - TOC JHA.

Certified Asbestos Worker

19. Perform Class I-III activities and waste packaging in asbestos regulated areas and Class IV debris pick-up in non-regulated areas.

20. Perform identified equipment and personal decontamination procedures per the AWP upon exiting the regulated area.

IHT

21. Conduct Class IV support of Class I-IV asbestos work activities.

    a. Conduct personal and area airborne asbestos sampling.

HPT

22. Conduct Class IV support of Class I-IV asbestos work activities.

    a. Conduct survey and/or release sampling.

Waste Services

23. Perform class IV support activities for asbestos work.

    a. As applicable, pick up packaged waste for disposal as asbestos-regulated waste and/or mixed waste.

Asbestos Supervisor

24. Complete the “Asbestos Supervisor” portion of the AWP, and sign and review with the Asbestos SME and AHERA Project Designer for permit closeout.

    a. Retain completed AWP in work package.

    b. Review work implementation for lessons learned, noting both problems and opportunities for improvement on the AWP.

c. Conduct post-job review.

Asbestos SME

25. Receive post-work AWP, review with Asbestos Supervisor, and sign and return to AHERA Project Designer for retention in the work package.

AHERA Project Designer

26. Receive post-work AWP, update Asbestos Gasket Database, as applicable, sign and close permit and retain in the work package.

4.2.1 Bulk Asbestos Sampling

Facility/Shift Manager

1. Inform occupants and visitors and schedule work to restrict access during asbestos sampling activities.

AHERA inspector

2. Perform a limited AHERA Inspection in facilities using 7-ABS-860:

- Identify homogeneous areas of materials and functional spaces where homogeneous materials are located
- Classify the types of material and assess condition
- Identify the number of samples required by AHERA and recommend a number of samples to meet both AHERA and provide reasonable spatial representation for each homogeneous material
- Collect bulk samples using SWIHD documentation and standard methods that include, wet methods of disturbance, use of HEPA-filtered vacuum cleaners at point of disturbance when sampling materials that are friable or could reasonably become friable during sampling, and post-sampling wet-wipe.
- Dispose of sampling waste as asbestos-contaminated
- Sign the COC and release samples to IHT or deliver to lab, as applicable.
- Assist Asbestos SME in AHERA Inspection documentation and reporting.
- Report ACM that is not in good condition to the Asbestos SME or Coordinator, as soon as possible.

3. Perform limited Asbestos Inspection and Bulk Sampling, as applicable to the scope of work, in facilities, tank farms and other structures following AHERA methods of sample collection and notation.

4. Document bulk sampling information in SWIHD using, notes, maps, photos, etc.

NOTE: The following rules apply when documenting bulk sampling information:

- Each facility sampled must have its own SWIHD survey
- Structures and buildings must be identified in SWIHD under the "Non-Farm" designation with the corresponding facility number selected from the drop-down menu.
- Buildings inside tank farms will be identified in SWIHD under the "Non-Farm" designation, not the tank farm prefix.
- Insulation and other materials sampled inside a tank farm but not having a facility number will be identified in SWIHD under the tank farm prefix.

5. As needed, assist AHERA Inspectors with sample custody and handling.

Analytical Lab

6. Send bulk asbestos sampling results to the Asbestos SME.

Asbestos SME

7. Cross reference bulk sample results with associated personal air sampling in SWIHD and annotate NEA with bulk sampling results, as applicable.

8. Notify the Asbestos Inspector, AHERA Designer and other stakeholders of bulk sample results.

   a. Interpret bulk sampling results and identify material designation.

   b. Work with AHERA Inspector to prepare Inspection Report.

9. Report the Asbestos Inspection and sample results to the Facility/Shift Manager and other stakeholders.

   - Post on the Asbestos Homepage in the S&H Toolbox.

4.3 Unplanned Maintenance Activities

Employee

1. Observe and follow postings.

2. Immediately report spills and uncontrolled fiber release.

Custodian

3. Perform stripping and buffing of asbestos flooring using guidance from Attachment B per maintenance schedule.

ACP

4. Review maintenance and preventative work packages for potential asbestos hazards and implement controls per work control practices.

ACP, AHERA Project Designer or Asbestos Coordinator	5.	For unplanned releases, complete the following. a. Visit the site of the release as soon as possible. b. Cordon off the affected area and post and control as an Asbestos Regulated Area. c. Develop response and containment plan to include initial wetting of the material, as appropriate. d. Document the type of material. e. Record the amount of material disturbed. f. Record the likely source and/or cause of disturbance. g. Record the number of affected employees. h. Take pictures and log response actions. i. Communicate information to IH Manager or Asbestos Coordinator.
Asbestos Supervisor	6.	Supervise and conduct response action including the pre-job brief.
Certified Asbestos Worker	7.	Perform asbestos spill response/clean-up work.
Waste Services	8.	Provide waste container and handle packaged asbestos waste.
AHERA Project Designer	9.	As applicable, prepare notice of emergency repair/removal of asbestos to the Benton County Clean Air Authority.
IH Manager	10.	As applicable, prepare DOE and occurrence reports and notifications.

5.0 DEFINITIONS

Asbestos-containing material (ACM). Any material containing >1% asbestos (chrysotile, amosite, crocidolite, tremolite, actinolite, anthophyllite) fiber.

Authorized person. Any person required by work duties to be present in regulated areas, with the consent of the Asbestos Supervisor.

Asbestos Competent Person (ACP). Performs the duties of the Competent Person under the OSHA Asbestos standards; and evaluates TOC activities for potential asbestos hazards.

Class I Asbestos Work. Activities involving the removal of TSI and surfacing ACM and PACM.

Class II Asbestos Work. Activities involving the removal of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

Class III Asbestos Work. Repair and maintenance operations where <3 square or linear feet of ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.

Class IV Asbestos Work. Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM, and activities to clean up dust, waste and debris.

Competent Person. In addition to the definition in 29 CFR 1926.32 (f), one who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, who has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f): in addition, for Class I and Class II work who is specially trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for supervisor, or its equivalent and, for Class III and Class IV work, who is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2).

Critical Barrier. One or more layers of plastic sealed over all openings into a work area or any other similarly placed physical barrier sufficient to prevent airborne asbestos in a work area from migrating to an adjacent area.

Decontamination area. An enclosed area adjacent and connected to the regulated area; consisting of an equipment room, shower room, and clean room; used for decontamination of workers, materials, and equipment that are contaminated with asbestos.

Directed Ventilation. In a regulated area, movement of contaminated air away from the decontamination facility, towards a HEPA filtered negative air machine or exhaust.

Disturbance. Activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. Disturbance includes cutting away small amounts of ACM and PACM, no greater than the amount which can be contained in one standard sized glove bag or waste bag in order to access a building component. In no event shall the amount of ACM or PACM so disturbed exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.

Employee exposure. Exposure to airborne asbestos that would occur, without regard to use of respiratory protection.

Excursion limit (EL). The maximum level of airborne asbestos fibers an employee may be exposed to, when measured as a 30-minute peak exposure. The asbestos EL is 1.0 f/cc of air, averaged over 30-minutes.

Fiber. A particle, 5 micrometers (μm) or longer in length, with a length-to-width ratio of at least 3 to 1.

Friable. ***When dry***, a material that can be crumbled, pulverized, or reduced to a powder under hand pressure; when the matrix of a material no longer binds and fiber is freely released.

High-Efficiency Particulate Air (HEPA) Filter. A filter capable of trapping and retaining at least 99.97 % of particles to a size of 0.3 micrometers (μm) in diameter.

Homogeneous Area. An area of building material or thermal system insulation (TSI) that is uniform in color and texture.

Intact. An ACM that has not been crumbled, pulverized, or otherwise deteriorated so that asbestos is no longer bound in its matrix.

Miscellaneous Material. Material other than TSI or surfacing material, includes acoustic ceiling tile, mastics/adhesives, carpet, wire coatings, caulk, wall systems, etc.

Negative Exposure Assessment (NEA). A demonstration by the employer that employee exposure during an operation is expected to be consistently below the permissible exposure limits, as outlined in (f)(2) (iii) of the Construction Asbestos Standard.

Permissible Exposure Limit (PEL). The maximum level of airborne asbestos fibers an employee may be exposed to when measured as an eight-hour time weighted average (8-hr TWA). The Asbestos PEL is 0.1 f/cc, 8-hr TWA. (Also see excursion limit.)

Presumed Asbestos-Containing Material (PACM).TSI and surfacing material. For TOC operations, PACM extends to miscellaneous materials as well. Designation of a material as "PACM" may be rebutted with AHERA bulk sampling results or specifications identifying use of "asbestos-free" materials.

Project Designer. A person who has successfully completed the training requirements for an abatement project designer specified by 40 CFR 763.90(g). A professional engineer (PE) or certified industrially hygienist (CIH) serving in this role must also participate in the AHERA training course.

Regulated Area. An area established to designate where Class I, II, and III asbestos work is conducted, and adjoining areas where waste and contaminated equipment are staged, per the OSHA Construction definition. An area where airborne concentrations of asbestos exceed, or are reasonably anticipated to exceed, the PELs, per the OSHA General Industry definition.

Repair. Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM or PACM attached to structures or substrates.

Surfacing material. Material that is sprayed-on, trowelled-on, or otherwise applied to surfaces, such as acoustical plaster on ceilings, sprayed-on fireproofing, stucco, soft concrete.

Tank Operations Contractor (TOC). The prime contractor having responsibility over Hanford Tank Farm operations.

Thermal system insulation (TSI). Asbestos-containing material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain. NOTE: For TOC operations, TSI does not include the black asphaltic coating/mastic commonly installed over outdoor structures as weatherproofing—mastic is considered a miscellaneous material.

6.0 RECORDS

The following records are generated during the performance of this procedure:

- TOC Asbestos Work Permit (A-6003-870)

- TOC Limited AHERA inspection and sampling records and reports
- TOC Asbestos Negative Exposure Assessment (A-6006-111)
- Benton County, Notification of Intent to Remove Asbestos Containing Materials
- WRPS input to Site-wide Annual Notification of Intent to Remove Asbestos
- Notification of Intent to Remove Asbestos Containing Materials Addendum (A-6002-551).

The record custodian identified in the Company Level Records Inventory and Disposition Schedule (RIDS) is responsible for record retention in accordance with TFC-BSM-IRM_DC-C-02.

7.0 SOURCES

7.1 Requirements

1. 10 CFR 851, "Worker Safety and Health Program."
2. 29 CFR 1910.1020, "Access to Employee Exposure and Medical Records."
3. 29 CFR 1910.1200, "Hazard Communication."
4. 29 CFR 1926.32(f), "Definitions."
5. 29 CFR 1926.1101, "Asbestos (Construction)," Subpart Z, Section 1101.
6. 29 CFR 1910.1001, "Asbestos (General Industry)."
7. 40 CFR 61, Subpart N, Asbestos, "National Emission Standard for Hazardous Air Pollutants (NESHAP)."
8. Applicable requirements under 40 CFR 763, Subpart E, "Asbestos Hazard Emergency Response Act (AHERA)."
    a. 40 CFR 763.86, "Sampling."
    b. 40 CFR 763.90, "Response Actions."
    c. 40 CFR 763.92, "Training and Periodic Surveillance," (a)(1) and (a)(2)."
    d. Appendix C, "Model Accreditation Plan."
9. Applicable requirements under WAC 296-65, "Asbestos Removal and Encapsulation."
    a. 296-65-005 and 296-65-010, Asbestos worker training course content and certification.
    b. 296-65-007 and 296-65-012, Asbestos supervisor training course content and certification.

10. Memorandum of Agreement Relating to Removal of Asbestos Materials and Demolitions on the Hanford Site (Washington Department of Ecology and Department of Energy).

11. Article 8 of the Benton County Air Authority, Regulation 1.

7.2 References

1. TFC-ESHQ-S_IH-C-05, "Respiratory Protection."

2. TFC-OPS-MAINT-C-01, "Tank Operations Contractor Work Control."

3. TFC-OPS-MAINT-C-02, "Pre-Job Briefing and Post-Job Reviews."

4. TF-OPS-IHT-009, "Industrial Hygiene Pump Preparation and Field Use for Conducting Personal/Area Air Sampling."

5. TF-OPS-IHT-010, "Field Wipe and Bulk Sampling Methods."

6. TO-100-052, "Perform Waste Generation, Segregation, Accumulation and Clean-Up."

7. 7-ABS-860, "Asbestos Inspection and Bulk Sampling."

Table 1. OSHA Asbestos Work Classification, 29 CFR 1926.1101.

OSHA Regulated Activities	Activity Description
Class I Requires On-Site Asbestos Supervisor	**Removal or abatement of > 3 linear or square feet of TSI or surfacing ACM/PACM:** • Removal of pipe or vessel thermal system insulation (TSI) and breeching • Removal of surfacing plaster, stucco, acoustic texture, or fireproofing, etc.
Class II Requires On-Site Asbestos Supervisor	**Removal or abatement of >3 linear or square feet of non-friable ACM/PACM (Miscellaneous materials):** • Acoustic ceiling tile • Wallboard/joint compound texture • Resilient floor materials (tile, sheet vinyl/linoleum, cove base) • Mastics/Adhesives, including weatherproofing mastic on piping and ductwork • Cement asbestos products (pipe, ripple board, panels) • Resilient gasket material • Asbestos cloth, paper, paper expansion tape, cloth gasket material • Asphalt roofing material-subject to certain exemptions.
Class III Disturbed material fits in a single waste or glove bag	**Repair, inspection, encapsulation, or maintenance activities where <3 linear or square of ACM/PACM, including TSI and surfacing, are likely to be disturbed:** • Encapsulation/inspection of friable ACM/PACM • Localized or minor disturbance of ACM/PACM from maintenance and repair activities • Bulk material sampling *NOTE--Regulated Area not required for Bulk Sampling.*
Class IV Incidental contact, Spill Response	**Incidental contact with ACM/PACM:** • Support work and/or handling/analysis of samples collected during asbestos activities • Handling of packaged waste from Class I, II, or III activities • Pick-up of ACM/PACM debris from spill including wind erosion, or accidental disturbance *NOTE--ACP will evaluate spill for scope of response* • Asbestos floor stripping, buffing *NOTE--Attachment B contains further information.*

Table 2. Protective Clothing and Equipment Requirements for Asbestos Activities.

OSHA Class	Asbestos Activity	Respiratory Protection	Protective Clothing
Class I	Friable ACM removal (TSI, Surfacing)	Tight-fitting, Full-face (FF) Powered Air Purifying Respirator (PAPR) with High Efficiency (HE) filters, or Tight-fitting FF SAR	Disposable coveralls, shoe covers, hood, gloves*
Class I, w/ NEA	TSI removal inside glove-bag; TSI/Surfacing removal inside Negative Pressure Enclosure	Half-face (HF) or FF Tight-fitting APR/PAPR with HE filters	"Blues" in Non-rad/RBA or "Whites" in CA/HCA, gloves*
Class II	Non-Friable ACM removal	HF or FF Tight-fitting APR/PAPR with HE filters	Disposable coveralls, shoe covers, hood, gloves*
Class II, w/NEA	ACM removal inside glove-bag	Voluntary respiratory protection (APR/PAPR with HE filters)	"Blues" in Non-rad/RBA or "Whites" in CA/HCA, gloves*
Class II, w/NEA	ACM removal inside negative pressure enclosure or outdoors; Gasket removal without use of glove-bag	HF or FF Tight-fitting APR/PAPR with HE filters	"Blues" in Non-rad/RBA or "Whites" in CA/HCA , gloves*
Class III	Surfacing ACM removal/repair; Bulk Sampling	HF or FF Tight-fitting APR/PAPR with HE filters	Disposable coveralls, shoe covers, hood, gloves*
Class III, w/NEA	ACM removal inside glove-bag; Bulk Sampling of Miscellaneous Materials	Voluntary respiratory protection (APR/PAPR with HE filters)	"Blues" in Non-rad/RBA or "Whites" in CA/HCA, gloves*
Class III, w/NEA	Bulk Sampling of TSI or Surfacing	HF or FF Tight-fitting APR/PAPR with HE filters	"Blues" in Non-rad/RBA or "Whites" in CA/HCA, gloves*
Class IV	Pick-up *intact* and/or non-friable ACM debris (i.e. ,spill); Asbestos Floor Maintenance (Strip/Buff)	Voluntary respiratory protection (APR/PAPR with HE filters)	"Blues" in Non-rad/RBA or "Whites" in CA/HCA, gloves*
Class IV, Non-Intact	Pick-up *non-intact* ACM debris (i.e., spill)	HF or FF Tight-fitting APR/PAPR with HE filters	Disposable coveralls, shoe covers, hood, gloves*

NOTES:
Specific glove information is provided in project JHA. Gloves used to handle ACM/PACM must be disposed of as ACM waste.

A tight-fitting PAPR may be used in lieu of any APR whenever: 1) the employee chooses; 2) the respirator provides adequate protection. PAPRs are appropriate for Class I operations if the exposure assessment demonstrates exposure levels do not exceed 1 f/cc over an 8-hour TWA.

Table 3. Training Requirements for Asbestos Activities.

Role	Activity/Operation	Course #	Training Course
Asbestos Coordinator	TOC Asbestos program oversight and interpretative authority; Oversight planning and review of TOC Asbestos Program activities	170579 170599 170609 170060.	CIH, PE or Licensed Architect, with, AHERA Project Designer, AHERA Inspector, AHERA Management Planner, Asbestos Supervisor
Asbestos SME	Interpretative authorities in line organization activities where PACM is disturbed; Review and sign planning documents and prepare summary reports of asbestos inspections and activities	170060 or 170068; or 170609	Completed TOC IH Qualification Card with Asbestos SME Qualification (Asbestos Supervisor and AHERA Inspector)
AHERA Project Designer/Planner	Plans asbestos activities; Prepares Asbestos Work Permit, JHA and Notifications (EPA, Occupants)	170579 170619 170599.	Completed TOC Planner Qualification Card with AHERA Project Designer, Management Planner, Inspector
AHERA Management Planner	Oversights ACM/PACMs in facilities; Recommends response actions or O&M.	170599.	AHERA Management Planner.
AHERA Inspector	Inspection and assessment of building ACM/PACM; Collection of bulk samples.	170609.	AHERA Building Inspector.
Asbestos Competent Person (ACP)	Evaluate and provide emergency response to ACM/PACM spills and review maintenance and facility activities for asbestos hazards	170060 or 170068.	Asbestos Supervisor
Asbestos Supervisor	PIC over Class I-III construction and operations asbestos activities	170060 or 170068	Asbestos Supervisor.
Asbestos Worker Requires Asbestos Supervisor	Class I-III work with ACM/PACM	170052 or 170055.	Certified Asbestos Worker.
Technical Support	Class IV support activities in Asbestos Regulated Areas	02006L.	Asbestos Awareness.
Custodian	Class IV support activities in Asbestos Regulated Areas.	02006L	Asbestos Awareness
"Non- Asbestos" Workers	Incidental roof work.	02006L.	Asbestos Awareness.

ATTACHMENT A – ACM/PACM PLANNING CHECKLISTS

(7.1.5, 7.1.6)

Planning Checklists are general in nature and not all inclusive of every situation involving ACM/PACM. Checklists may not provide the appropriate level of detail needed to plan all work activities. Consult ACP and Asbestos SME in project planning, and use checklists and other materials identified in asbestos training courses, as appropriate.

ACM Removal NOI: Class I or II asbestos abatement or removal require notifications when the amount of ACM/PACM is >10 linear or >48 square feet.

Class I Indoor Work:

1. Establish and post a regulated area. Use critical barriers/isolation and drop cloths when removing:

   - >10 linear or 48 square feet of TSI or Surfacing ACM
   - <10 linear or 48 square feet of TSI or Surfacing ACM if NEA has not been established for employees working adjacent to regulated area while Class I work is performed.

2. Perform exposure and area air sampling and visual inspections of critical barriers/isolation during each work shift.

   - Verify clearance levels specified in 40 CFR 763, Subpart E, ≤0.01 f/cc, are being maintained in clean room, outside of the regulated area, and downstream of negative air machines (NAMs).

3. Isolate HVAC and use directed ventilation if NEA has not been established or where airborne concentrations are reasonably anticipated to exceed PELs.

4. Use one or more of the following controls listed in OSHA 1926.1101(g)(5):

   - NPE
   - Negative-pressure glove bag for pipe runs
   - Glove bag for connecting configurations designed for this purpose
   - Water spray process.

5. Doff outer layer of protective clothing in Equipment Room; Exit through contiguous Decontamination Shower and remove respirator face piece in shower; Enter Clean room in modesty clothing (bathing suit).

Class I Outdoor work:

1. Establish and post a regulated area. Use critical barriers/isolation and drop cloths during removal of:

   - >10 linear or 48 square feet of TSI or surfacing ACM removal
   - <10 linear or 48 square feet of TSI or Surfacing ACM, if NEA has not been established for employees working adjacent to regulated area while Class I work is performed.

ATTACHMENT A – ACM/PACM PLANNING CHECKLISTS (cont.)
(7.1.5, 7.1.6)

2. Perform exposure and other air sampling including negative air machine exhaust, and visual inspections of critical barriers/isolation during each work shift, at boundaries to the regulated area:

   - Verify clearance levels specified in 40 CFR 763, Subpart E, ≤0.01 f/cc, are being maintained downstream of NAM exhaust and in the clean room.

3. Use one or more of the following controls as listed in OSHA 1926.1101(g)(5):

   - NPE
   - Negative-pressure glove bag for pipe runs
   - Glove bag for connecting configurations designed for this purpose
   - Water spray process.

4. Field Decontamination process, undress assist:

   - Wet-wipe and/or HEPA vacuum tools and equipment
   - Wet-wipe and/or HEPA vacuum respirator, head, shoulders
   - Doff outer layer of protective clothing starting with the most contaminated (foot covers, outer gloves, disposable coveralls) on exiting regulated area
   - Exit tank farm, or field location, shower at nearest available facility.

Class I Alternate Controls

CIH or PE, also qualified as an AHERA Project Designer, evaluates work area, work practices, and engineering controls, and certifies in writing the control method is adequate to reduce direct/indirect exposures to below PELs/Clearance levels using anticipated worst-case exposure sampling results, mock-ups, and/or OSHA variance granting exemption. Class I alternate controls >25 linear feet require DOE notification.

Class II Indoor Work:

1. Critical barriers/isolation methods and drop cloths area required:

   - NEA may demonstrate PELs and Clearance Levels are met and reduce the need for critical barriers when intact removal is performed
   - Perimeter monitoring/clearance sampling required if isolation methods or other types of barriers are required.

ATTACHMENT A – ACM/PACM PLANNING CHECKLISTS (cont.)
(7.1.5, 7.1.6)

2. If anticipated exposures meet or exceed the asbestos ELs, use:

   - Wet methods of removal/handling
   - Prompt containerization of waste
   - Process isolation/enclosure
   - Local HEPA exhaust or directed ventilation
   - Additional feasible controls supplemented with respirators.

3. Removal of vinyl and asphalt flooring materials:

   - No sanding, dry scraping, or ripping of material
   - Wet methods of removal/handling
     – May omit wetting if dry heat removal of tiles is more feasible
   - Local HEPA exhaust or directed ventilation
   - Intact removal to the fullest extent feasible
     – Use of chemical agents needs to be planned.

Indoor/Outdoor Work:

Removal of CAB/P on Exterior Structures Other than Roofs

- Intact removal, to the fullest extent feasible
- Cut nail heads. NOTE: Nails holding CAB may contain lead
- Wet methods of removal, unless an Asbestos Supervisor or Project Designer determines wetting methods are not feasible because of additional safety or ALARA chemical/radiological hazards.
- Promptly label and containerize ACM
- Field Decontamination process:
  – Wet-wipe/HEPA vacuum respirator, head, shoulders
  – Doff outer layer of protective clothing (outer gloves, disposable coveralls) on exiting regulated area
  – Exit farm, or field location, shower at nearest available facility before lunch break or end of shift.

ATTACHMENT A – ACM/PACM PLANNING CHECKLISTS (cont.)
(7.1.5, 7.1.6)

Resilient Gasket Removal:

- Intact removal to the fullest extent feasible
- Wet methods of removal
- Promptly label and containerize waste
- Field Decontamination process:
  - Wet-wipe/HEPA vacuum respirator, head, shoulders
  - Doff outer layer of protective gloves and coveralls and dispose of as asbestos waste; doff respirator and place in bag
  - Exit regulated area into tank farms
  - Exit tank farm facility and wash hands/face at nearest location.

Outdoor Work:

Removal of Built-Up Roofing Materials.

- Intact removal, to the fullest extent feasible
- Wet methods for non-intact materials, unless a the Asbestos Supervisor or Project Designer determines wetting methods feasibility and additional safety hazards
- Wet methods or respirators not required on sloped roof, with NEA and intact removal
- Wet methods and HEPA vacuum not required for removal of intact sections of asbestos-containing material <10 square feet in one day if manual methods of removal will keep material intact
- Continuous misting of cutting machine, unless an Asbestos Supervisor or Project Designer determines the use will result in additional safety or ALARA chemical/radiological hazards
- HEPA vacuum dust and debris associated with non-intact sources of ACM
- ACM from the roof is removed as soon as practical or at day's end
- Dropping material to ground from roof is prohibited
  - Carry by hand or by use of covered, dust-tight crane or hoist
- Non-intact material, once removed, must be wet, bagged or wrapped, or lowered to the ground as soon as practical
- Promptly label and containerize ACM, dust, and debris
- Lower via dust-tight chute or bag and lower by day's end

ATTACHMENT A – ACM/PACM PLANNING CHECKLISTS (cont.)
(7.1.5, 7.1.6)

- Protect roof vent system

- Use HEPA filtered power roof cutters to remove aggregate base built-up roofing;
  – smooth base can be HEPA-vacuumed or wet-swept

- Field Decontamination process, undress assist:
  – Wet-wipe/HEPA vacuum respirator, head, shoulders
  – Doff outer layer of protective clothing (outer gloves, disposable coveralls) on exiting regulated area
  – Exit farm, or field location, shower at nearest available facility before lunch break or end of shift.

NOTE: Asbestos Work with Asphalt-based Roofing – MAY become Class II if the material does not remain intact. Prior to job, Asbestos Supervisor or ACP must inspect work site to determine if material is intact and will remain intact.

- Sanding, abrading, grounding prohibited.
- Intact, manual methods of removal only.
- Dropping material to the ground from the roof is prohibited
  – Carry by hand or by use of covered, dust-tight crane or hoist.
- Material must be removed from roof by end of work shift.

Class II Alternate Controls Checklist

CIH evaluates work area, work practices, and engineering controls, and certifies in writing that the control method is adequate to reduce direct and indirect exposures to below the PELs using worst case exposure monitoring under similar work conditions, employee training and experience to demonstrate exposures will be less than PEL. Class II alternate controls require DOE and Benton County Air Quality notification and approval.

Class III Work Planning Checklist

- Wet methods, appropriate control methods when handling ACM/PACM
- Critical barriers, such as glove bag and ventilation isolation, in absence of NEA
- Use of Impermeable Drop cloth, as feasible
- Prompt cleanup/disposal in 6-mil plastic bags
- Local HEPA exhaust/HEPA vacuum cleaner, as feasible.
- Local enclosure/isolation where TSI or surfacing material is disturbed, cut or abraded.

ATTACHMENT B - ASBESTOS FLOOR MAINTENANCE GUIDELINES

Recommended Interim Guidelines: Stripping Asbestos-Containing Floors

The Environmental Protection Agency (EPA) and The Occupational Safety and Health Administration (OSHA) (OSHA 29 CFR 1926.1101) recommend that school officials, building owners, and custodial/maintenance staff follow basic guidelines when stripping wax or finish coat from asbestos-containing floor covering:

1. AVOID STRIPPING FLOORS. Stripping of floors should be done as infrequently as possible -- perhaps once or twice or less per year depending on circumstances. The frequency should be carefully considered as floor maintenance schedules or contracts are written or renewed.

2. PROPERLY TRAIN STAFF. Custodial or maintenance staff who strip floors should be trained to operate properly and safely the machines, pads, and floor care chemicals used at the facility.

3. FOLLOW APPROPRIATE WORK PRACTICES. Custodial or maintenance staff who strip floors should follow appropriate work practices, such as those recommended here, under informed supervision. Directions from floor tile and floor wax product manufacturers on proper maintenance procedures should be consulted.

4. STRIP FLOORS WHILE WET. The floor should be kept adequately wet during the stripping operation. Do NOT perform dry stripping. Prior to machine operation, an emulsion of chemical stripper in water is commonly applied to the floor with a mop to soften the wax or finish coat. After stripping and before application of the new wax, the floor should be thoroughly cleaned, while wet.

5. RUN MACHINE AT SLOW SPEED. If the machine used to remove the wax or finish coat has variable speeds, it should be run at slow speed (UNDER 300 rpm) during the stripping operation.

6. SELECT THE LEAST ABRASIVE PAD POSSIBLE. EPA recommends that the machine be equipped with the least abrasive pad possible to strip wax or finish coat from asbestos-containing floors.

7. DO NOT OVERSTRIP FLOORS. Stop stripping when the old surface coat is removed. Overstripping can damage the floor and may cause the release of asbestos fibers. Do NOT operate a floor machine with an abrasive pad on unwaxed or unfinished floors.

8. SANDING OF ASBESTOS-CONTAINING FLOORING MATERIAL IS PROHIBITED.

REMEMBER: Improperly removing asbestos-containing floor covering could result in the release of high levels of asbestos. EPA recommends that you leave asbestos-containing floor covering in place, provided the material is in good condition. However, proper maintenance procedures, such as those outlined above, should always be followed.

These guidelines were developed by the U.S. Environmental Protection Agency in consultation with asbestos control professionals and several flooring material and floor care product manufacturers to reduce any possible exposure to asbestos fibers.